Insulock®HR Part A

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision Date: N/A Date of Issue: 01/19/2015 Version: 1.0

SECTION 1: IDENTIFICATION

Product Identifier

Product Form: Mixture

Product Name: Insulock®HR Part A

Product Code: 7347

Intended Use of the Product

Adhesive

Name, Address, and Telephone of the Responsible Party

Manufacturer

The Garland Company, Inc.
3800 East 91st Street
Cleveland, Ohio 44105-2197
T-800-762-8225
F-216-641-0633
www.garlandco.com

Supplier

The Garland Company, Inc.
3800 East 91st Street
Cleveland, Ohio 44105-2197
T-800-762-8225
F-216-641-0633

The Garland Company, Inc.
209 Carrier Drive
Toronto, Ontario M9W 5Y8
T-416-747-7995 800-387-5991
F-416-747-1980

Emergency Telephone Number

Emergency Number: 1-800-262-8200 (CHEMTREC)

SECTION 2: HAZARDS IDENTIFICATION

Classification of the Substance or Mixture

Classification (GHS-US)

Skin Irrit. 2	H315
Skin Sens. 1	H317
Eye irrit. 2	H319
Acute Tox. 4	H332
Resp. Sens. 1	H334
STOT SE 3	H335

Label Elements

GHS-US Labeling

Hazard Pictograms (GHS-US) :

GH507

GH508

Signal Word (GHS-US) : Warning

Hazard Statements (GHS-US) :

H315 – Causes skin irritation.
H317 – May cause an allergic skin reaction.
H319 – Causes serious eye irritation.
H332 – Harmful if inhaled.
H334 – May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 – May cause respiratory irritation.

Precautionary Statements (GHS-US) :

P261 – Avoid breathing dust/fume/gas/mist/vapors/spray.
P264 – Wash face, hands and any exposed skin thoroughly after handling.
P271 – Use only outdoors or in a well-ventilated area.
P272 – Contaminated work clothing should not be allowed out of the workplace.
P280 – Wear protective gloves/protective clothing/eye protection/face protection.
P285 – In case of inadequate ventilation wear respiratory protection.
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water.
P332 + P313 - If skin irritation occurs: Get medical advice/attention.
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention.
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 - If eye irritation persists: Get medical advice/attention.
P304 + P341 - IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing.
P342 + P311 - If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.

Other Hazards

Other Hazards Not Contributing to the Classification: Contains a small amount of hydrogen sulfide. Hydrogen sulfide is a fatal, and highly flammable gas with a rotten egg odor that quickly causes odor fatigue. Heating of this product and storage under elevated temperatures or over long periods of time may release higher amounts of hydrogen sulfide. Hydrogen sulfide is also an asphyxiant.

Unknown Acute Toxicity (GHS-US)

No data available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Not available

Mixture

Name	Product identifier	% (w/w)	Classification (GHS-US)
Diphenylmethanediisocyanate, isomers and homologues	(CAS No) 9016-87-9	25-50	H315 – Skin Irrit. 2 H317 – Skin Sens. 1 H319 – Eye Irrit. 2 H332 – Acute Tox. 4 H334 – Resp. Sens. 1 H335 – STOT SE 3
4,4' – methylenediphenyl diisocyanate	(CAS No) 101-68-8	25-50	H315 – Skin Irrit. 2 H317 – Skin Sens. 1 H319 – Eye Irrit. 2 H332 – Acute Tox. 4 H334 – Resp. Sens. 1 H335 – STOT SE 3
Methylenediphenyl diisocyanate	(CAS No) 26447-40-5	2.5-10	H315 – Skin Irrit. 2 H317 – Skin Sens. 1 H319 – Eye Irrit. 2 H332 – Acute Tox. 4 H334 – Resp. Sens. 1 H335 – STOT SE 3

Full text of H-Phrases: See Section 16

SECTION 4: FIRST AID MEASURES

Description of First Aid Measures

First-aid Measures General: Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

First-aid Measures After Inhalation: Supply fresh air and be sure to call for a doctor. In case of unconsciousness, place patient stably in side position for transportation. Call a doctor immediately. In case of overexposure, remove to fresh air and seek medical attention.

First-aid Measures After Skin Contact: If skin becomes irritated, seek medical attention. Immediately wash with water and soap and rinse thoroughly.

First-aid Measures After Eye Contact: Rinse opened eye for 20 minutes under running water. Call a doctor immediately.

First-aid Measures After Ingestion: Rinse out mouth with water. Drink 1-2 glasses of water but DO NOT induce vomiting. No not ive liquids to a drowsy, convulsing or unconscious person. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. Seek medical treatment.

Most Important Symptoms and Effects, Both Acute and Delayed

Symptoms/Injuries: Causes eye irritation. Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed. Swallowing the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis.

Symptoms/Injuries After Inhalation: May cause irritation to the respiratory tract.

Symptoms/Injuries After Skin Contact: May cause skin irritation.

Symptoms/Injuries After Eye Contact: Causes eye irritation.

Symptoms/Injuries After Ingestion: None known, not likely route of entry.

Chronic Symptoms: No further relevant information available.

Indication of Any Immediate Medical Attention and Special Treatment Needed

If medical advice is needed, have product container or label at hand.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: CO_2. Sand. Extinguishing powder.

Unsuitable Extinguishing Media: Do not use extinguishing media containing water.

Special Hazards Arising From the Substance or Mixture

Fire Hazard: No information available.

Explosion Hazard: No information available.

Reactivity: No information available.

Advice for Firefighters

Firefighting Instructions: Exercise caution when fighting any chemical fire.

Protection During Firefighting: As in any fire, wear self-contained breathing apparatus pressure demand, MSHA/NAOSH (approved or equivalent) and full protective gear. Standard procedure for chemical fires.

Reference to Other Sections

Refer to section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Use personal protective equipment. Keep people away from and upwind of spill/leak. Remove all sources of ignition. Evacuate personnel to safe areas. Ensure adequate ventilation.

For Non-emergency Personnel

Protective Equipment: Use appropriate personal protection equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

For Emergency Responders

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Ventilate area.

Environmental Precautions

Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

Methods and Material for Containment and Cleaning Up

For Containment: Contain with inert absorbent material.

Methods for Cleaning Up: Cover spilled material with neutralization solution and mix. Wait 15 minutes. Collect material in open-head metal cdontainers. Repeat neutralization and cleaning process until surface is decontaminated. Apply drum lid but DO NOT secure. Allow containers to vent for 72 hours to let carbon dioxide escape. Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). Dispose contaminated material as waste according to Section 13.

Reference to Other Sections

See heading 8, Exposure Controls and Personal Protection.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

Precautions for Safe Handling: Avoid prolonged or repeated contact with skin. Avoid contact with eyes. Wash thoroughly after handling. Prevent formation of aerosols.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work.

Conditions for Safe Storage, Including Any Incompatibilities

Storage Conditions: Keep containers tightly closed when not in use. Protect from atmospheric moisture. Keep away from open flames and high temperatures.

Incompatible Materials: Heat sources.

Storage Area: Store locked up. Store in a well-ventilated place. Storage temperature 32°F - 90°F

Specific End Use(s)

Foamable adhesive

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

4,4' – methylenediphenyl diisocyanate (101-68-8)		
USA ACGIH	ACGIH TWA (ppm)	0.005 ppm
USA NIOSH	NIOSH REL (TWA) (mg/m^3)	0.05 mg/m^3
USA OSHA	OSHA PEL (ppm)	0.02 ppm
USA OSHA	OSHA PEL (TWA) (mg/m^3)	0.2 mg/m^3

Methylenediphenyl diisocyanate (26447-40-5)		
USA ACGIH	ACGIH TWA (ppm)	0.005 ppm

USA OSHA	OSHA PEL (TWA) (mg/m^3)	0.2 mg/m^3
USA OSHA	OSHA PEL (TWA) (ppm)	0.02 ppm
USA NIOSH	NIOSH REL (TWA) (mg/m^3)	0.2 mg/m^3
USA NIOSH	NIOSH REL (TWA)(ppm)	0.02 ppm

Exposure Controls

Appropriate Engineering Controls: Ensure all national/local regulations are observed. Gas detectors should be used when flammable gases/vapors may be released.

Personal Protective Equipment: Gloves. Protective clothing. Protective goggles. Insufficient ventilation: wear respiratory protection.

Hand Protection: Protective gloves.

Eye Protection: Chemical goggles or safety glasses.

Skin and Body Protection: Wear suitable protective clothing.

Respiratory Protection: If exposure limits are exceeded or irritation is experienced, NIOSH approved respiratory protection should be worn.

Other Information: When using, do not eat, drink, or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State	:	Liquid
Appearance	:	Off White - Light Amber
Odor	:	Faint Aromatic
Odor Threshold	:	Not available
pH	:	Not available
Relative Evaporation Rate (butyl acetate = 1)	:	Not available
Melting Point	:	Not available
Freezing Point	:	Not available
Boiling Point	:	Not available
Flash Point	:	348°F (176°C)
Auto-ignition Temperature	:	Not available
Decomposition Temperature	:	Not available
Flammability (solid, gas)	:	Not available
Lower Flammable Limit	:	Not available
Upper Flammable Limit	:	Not available
Vapor Pressure	:	Not available
Relative Vapor Density at 68°F (20°C)	:	> 1 (Air = 1)
Relative Density	:	Not available
Specific Gravity	:	1.12
Solubility	:	Negligible
Partition coefficient: n-octanol/water	:	Not available
Explosion Data – Sensitivity to Mechanical Impact	:	Not available
Explosion Data – Sensitivity to Static Discharge	:	Not available
Volatile Organic Compounds	:	0 g/L

SECTION 10: STABILITY AND REACTIVITY

Reactivity: Not available.

Chemical Stability: Product is stable.

Possibility of Hazardous Reactions: May produce violent reactions with bases and numerous organic substances including alcohols and amines. MDI reacts slowly with water to form Carbon Dioxide gas. This gas can cause sealed containers to expand and possibly rupture. Contact with moisture, other materials that react with isocyanates, or temperatures above 350F, may cause polymerization.

Conditions to Avoid: Open flames and intense heat. Heating in air. Contact with moisture. Other materials that react with isocyanates.

Incompatible Materials: Reacts with amines, caustic alkali solutions, alcohols, ammonia, oxidizers, acids, polyols. Reacts with water forming carbon dioxide – may rupture sealed containers if contaminated with water.

Hazardous Decomposition Products: Carbon dioxide, carbon monoxide, oxides of nitrogen, dense black smoke, hydrogen cyanide,

isocyanic acid, other undetermined compounds.

SECTION 11: TOXICOLOGICAL INFORMATION

Information On Toxicological Effects - Product

Acute Toxicity: Not classified

LD50 and LC50 Data: Not available

Skin Corrosion/Irritation: Not classified

Serious Eye Damage: Contact with eye could cause tearing, reddening, and swelling. If left untreated, corneal damage can occur, and injury is slow to heal.

Respiratory or Skin Sensitization: Respiratory and skin sensitizer.

Germ Cell Mutagenicity: Data not available.

Teratogenicity: Not available

Carcinogenicity: May cause cancer.

Specific Target Organ Toxicity (Repeated Exposure): Lungs, kidney, central nervous system.

Reproductive Toxicity: Not available

Aspiration Hazard: May be fatal if swallowed and enters airways.

Specific Target Organ Toxicity (Single Exposure): Not classified

Symptoms/Injuries After Inhalation: Irritation of mucus membranes in the respiratory tract, causing runny nose, sore throat, coughing, chest discomfort, and shortness of breath. Exposure well above TLV may lead to bronchitis, bronchial spasm, and pulmonary edema (fluid in lungs).

Symptoms/Injuries After Skin Contact: Skin irritation, which may lead to the following symptoms: reddening, swelling, rash, scaling, or blistering. Cured product is difficult to remove from skin. Skin absorption is possible, but harmful effects are not expected from this route of exposure under normal conditions of handling and use.

Symptoms/Injuries After Eye Contact: Contact with eye could cause tearing, reddening, and swelling. If left untreated, corneal damage can occur, and injury is slow to heal.

Symptoms/Injuries After Ingestion: Single dose oral toxicity is low. Swallowing small amounts of this product during normal use is not likely to cause any adverse health effects. Ingestion of large amounts may cause serious injury or death.

Chronic Symptoms: As a result of previous repeated overexposure or a single large dose, certain individuals may develop isocyanate sensitization (chemical asthma), which will cause them to react to a later exposure to isocyanate at levels well below the TLV. These symptoms, which can include chest tightness, wheezing, cough, shortness of breath, asthma attack, could be immediate or delayed up to several hours after exposure. Similar to many non-specific asthmatic responses, there are reports that once sensitized, an individual can experience these symptoms upon exposure to dust, cold-air, or other irritants. This increased lung sensitivity can persist for weeks and in severe cases, for several years. Overexposure to isocyanates has also been reported to cause lung damage (including decrease in lung function), which may be permanent. Sensitization can either be temporary or permanent.

Information on Toxicological Effects – Ingredient(s)

LD50 and LC50 Data

Diphenylmethanediisocyanate, isomers and homologues (9016-87-9)	
LD50 Oral Rat	>2,000 mg/kg
LD50 Dermal Rabbit	>2,000 mg/kg

4,4' – methylenediphenyl diisocyanate (101-68-8)	
LD50 Dermal Rabbit	>2,000 mg/kg
LC50 Inhalation Rat	>2,000 mg/kg

Methylenediphenyl diisocyanate (26447-40-5)	
LD50, Oral Rat	>2,000 mg/kg
LD50, Dermal Rabbit	>2,000 mg/kg

Carcinogenicity Data:

Lung tumors have been observed in laboratory animals exposed to respirable aerosol droplets of MDI/Polymeric MDI (6 mg/m^3) for their lifetime. Tumors occurred concurrently with respiratory irritation and lung injury. Current exposure guidelines are expected to protect against these effects reported for MDI. No risk in finished product.

SECTION 12: ECOLOGICAL INFORMATION

Toxicity – Ingredients

The measured ecotoxicity is that of the hydrolyzed product, generally under conditions maximizing production of soluble species. The finished product is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 . 100 mg/L in the most

sensitive species tested).

Methylenediphenyl diisocyanate (MDI, 26447-40-5)	
LC50, *Danio rerio* (Zebra Fish), static test, 96 h	> 1,000 mg/L
EC50, *Daphnia magna* (Water Flea), static test, 24 h	> 1,000 mg/L
NOEC, *Desmodesmus subspicatus*, (Green Algae), static test, Growth rate inhibition, 72 h	1,640 mg/L
EC50, activated sludge test (OECD 209), Respiration inhibition, 3 h	> 100 mg/L
EC50, *Eisenia fetida*, (Earthworms), 14 d	> 1,000 mg/kg

4,4'-Methylenediphenyl diisocyanate (MDI, 101-68-8)	
LC50, *Danio rerio* (Zebra Fish), static test, 96 h	> 1,000 mg/L
EC50, *Daphnia magna* (Water Flea), static test, 24 h	> 1,000 mg/L
NOEC, *Desmodesmus subspicatus*, (Green Algae), static test, Growth rate inhibition, 72 h	1,640 mg/L
EC50, activated sludge test (OECD 209), Respiration inhibition, 3 h	> 100 mg/L
EC50, *Eisenia fetida*, (Earthworms), 14 d	> 1,000 mg/kg

Persistence and Degradability

In the aquatic and terrestrial environment, material reacts with water forming predominantly insoluble polyureas which appear to be stable. In the atmospheric environment, material is expected to have a short tropospheric half-life, based on calculations and by analogy with related diisocyanates.

Biodegradation Tests:

Bioaccumulative Potential – Product

Not established

Bioaccumulative Potential – Ingredients

Bioaccumulation: Bioconcentration potential is low (BCF<100 or Log Pow <3). In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

Mobility in Soil

In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

Other Adverse Effects

Other Information: Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Recommendations: Dispose of waste material in accordance with all local, regional, national, and international regulations.

Additional Information: Prevent runoff from entering drains, sewers, or waterways.

SECTION 14: TRANSPORT INFORMATION

In Accordance with DOT

Proper Shipping Name : Non-Regulated Material

In Accordance with IMDG

Proper Shipping Name : Not Regulated

Hazard Class :

Identification Number :

Packing Group :

Marine Pollutant :

In Accordance with IATA

Proper Shipping Name	:	Not Regulated
Hazard Class	:	
Identification Number	:	
Packing Group	:	
Marine Pollutant	:	

In Accordance with TDG

Proper Shipping Name	:	Not Regulated
Hazard Class	:	
Identification Number	:	
Packing Group	:	
Marine Pollutant	:	

SECTION 15: REGULATORY INFORMATION

US Federal Regulations

Diphenylmethanediisocyanate, isomers and homologues (9016-87-9)
Listed on the United States TSCA (Toxic Substances Control Act) Inventory

4,4'-methylenediphenyl diisocyanate (101-68-8)	
Listed on the United States TSCA (Toxic Substances Control Act) Inventory	
SARA Section 313 – Emission Reporting	>10.0 - < 30%

Methylenediphenyldiisocyanate (26447-40-5)
Listed on the United States TSCA (Toxic Substances Control Act) Inventory

US State Regulations

To the best of our knowledge, this product does not contain chemicals at levels which require reporting.

Canadian Regulations

Insul-Lock®HR
Diphenylmethanediisocyanate, isomers and homologues (9016-87-9)
Listed on the Canadian DSL (Domestic Substances List) Inventory

4,4'-methylenediphenyl diisocyanate (101-68-8)
Listed on the Canadian DSL (Domestic Substances List) Inventory

Methylenediphenyldiisocyanate (26447-40-5)
Listed on the Canadian DSL (Domestic Substances List) Inventory

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Revision date : 01/19/2015

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

H315	Causes Skin Irritation
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H332	Harmful if inhaled
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
H335	May cause respiratory irritation

Party Responsible for the Preparation of This Document

The Garland Company, Inc.
3800 East 91st Street
Cleveland, Ohio 44105-2197
T-800-762-8225

This information is based on our knowledge as of the Revision Date and is intended to describe the product only for the purposes of

Insul-Lock®HR Part B

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision Date: N/A Date of Issue: 01/19/2015 Version: 1.0

SECTION 1: IDENTIFICATION

Product Identifier

Product Form: Mixture

Product Name: Insul-Lock®HR Part B

Product Code: 7347

Intended Use of the Product

Adhesive

Name, Address, and Telephone of the Responsible Party

Manufacturer

The Garland Company, Inc.
3800 East 91st Street
Cleveland, Ohio 44105-2197
T-800-762-8225
F-216-641-0633
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Supplier

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The Garland Company, Inc.
209 Carrier Drive
Toronto, Ontario M9W 5Y8
T-416-747-7995 800-387-5991
F-416-747-1980

Emergency Telephone Number

Emergency Number: 1-800-262-8200 (CHEMTREC)

SECTION 2: HAZARDS IDENTIFICATION

Classification of the Substance or Mixture

Classification (GHS-US)

Skin Irrit. 2	H315
Skin Sens. 1	H317
Eye irrit. 2	H319

Label Elements

GHS-US Labeling

Hazard Pictograms (GHS-US) :

GH507

Signal Word (GHS-US) : Warning

Hazard Statements (GHS-US) :
H315 – Causes skin irritation.
H317 – May cause an allergic skin reaction.
H319 – Causes serious eye irritation.

Precautionary Statements (GHS-US) :
P261 – Avoid breathing dust/fume/gas/mist/vapors/spray.
P264 – Wash face, hands and any exposed skin thoroughly after handling.
P271 – Use only outdoors or in a well-ventilated area.
P272 – Contaminated work clothing should not be allowed out of the workplace.
P280 – Wear protective gloves/protective clothing/eye protection/face protection.
P285 – In case of inadequate ventilation wear respiratory protection.
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water.
P332 + P313 - If skin irritation occurs: Get medical advice/attention.
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention.
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 - If eye irritation persists: Get medical advice/attention.

Other Hazards

Other Hazards Not Contributing to the Classification: Contains a small amount of hydrogen sulfide. Hydrogen sulfide is a fatal, and highly flammable gas with a rotten egg odor that quickly causes odor fatigue. Heating of this product and storage under elevated temperatures or over long periods of time may release higher amounts of hydrogen sulfide. Hydrogen sulfide is also an asphyxiant.

Unknown Acute Toxicity (GHS-US)

No data available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Not available

Mixture

Name	Product identifier	% (w/w)	Classification (GHS-US)
N-(3-(trimethyoxysilyl)propyl)ethylenediamine	(CAS No) 1760-24-3	≤2.5	H314 – Skin Corr. 1B H317 – Skin Sens. 1

Full text of H-Phrases: See Section 16

SECTION 4: FIRST AID MEASURES

Description of First Aid Measures

First-aid Measures General: Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

First-aid Measures After Inhalation: Supply fresh air and be sure to call for a doctor. In case of unconsciousness, place patient stably in side position for transportation. Call a doctor immediately. In case of overexposure, remove to fresh air and seek medical attention.

First-aid Measures After Skin Contact: If skin becomes irritated, seek medical attention. Immediately wash with water and soap and rinse thoroughly.

First-aid Measures After Eye Contact: Rinse opened eye for 20 minutes under running water. Call a doctor immediately.

First-aid Measures After Ingestion: Rinse out mouth with water. Drink 1-2 glasses of water but DO NOT induce vomiting. No not ive liquids to a drowsy, convulsing or unconscious person. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. Seek medical treatment.

Most Important Symptoms and Effects, Both Acute and Delayed

Symptoms/Injuries: Causes eye irritation. Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed. Swallowing the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis.

Symptoms/Injuries After Inhalation: May cause irritation to the respiratory tract.

Symptoms/Injuries After Skin Contact: May cause skin irritation.

Symptoms/Injuries After Eye Contact: Causes eye irritation.

Symptoms/Injuries After Ingestion: None known, not likely route of entry.

Chronic Symptoms: No further relevant information available.

Indication of Any Immediate Medical Attention and Special Treatment Needed

If medical advice is needed, have product container or label at hand.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Use fire extinguishing methods suitable to surrounding conditions.

Unsuitable Extinguishing Media: Do not use extinguishing media containing water.

Special Hazards Arising From the Substance or Mixture

Fire Hazard: Dried solids can burn and release toxic fumes and vapors.

Explosion Hazard: No information available.

Reactivity: No information available.

Advice for Firefighters

Firefighting Instructions: Exercise caution when fighting any chemical fire.

Protection During Firefighting: As in any fire, wear self-contained breathing apparatus pressure demand, MSHA/NAOSH (approved or equivalent) and full protective gear. Standard procedure for chemical fires.

Reference to Other Sections

Refer to section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Use personal protective equipment. Keep people away from and upwind of spill/leak. Remove all sources of ignition. Evacuate personnel to safe areas. Ensure adequate ventilation.

For Non-emergency Personnel

Protective Equipment: Use appropriate personal protection equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

For Emergency Responders

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Ventilate area.

Environmental Precautions

Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

Methods and Material for Containment and Cleaning Up

For Containment: Contain with inert absorbent material.

Methods for Cleaning Up: Cover spilled material with neutralization solution and mix. Wait 15 minutes. Collect material in open-head metal cdontainers. Repeat neutralization and cleaning process until surface is decontaminated. Apply drum lid but DO NOT secure. Allow containers to vent for 72 hours to let carbon dioxide escape. Absorb with liquid-binding material (sand, diatomite,

acid binders, universal binders, sawdust). Dispose contaminated material as waste according to Section 13.

Reference to Other Sections

See heading 8, Exposure Controls and Personal Protection.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

Precautions for Safe Handling: Avoid prolonged or repeated contact with skin. Avoid contact with eyes. Wash thoroughly after handling. Open containers in a well-ventilated area and avoid breathing headspace vapors.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work.

Conditions for Safe Storage, Including Any Incompatibilities

Storage Conditions: Keep containers tightly closed when not in use. Protect from atmospheric moisture. Keep away from open flames and high temperatures.

Incompatible Materials: Heat sources.

Storage Area: Store locked up. Store in a well-ventilated place. Storage temperature 32°F - 90°F

Specific End Use(s)

Foamable adhesive

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

N-(3-(trimethoxysilyl)propyl)ethylenediamine (1760-24-3)
Contains no occupational exposure limit values.

Exposure Controls

Appropriate Engineering Controls: Ensure all national/local regulations are observed. Gas detectors should be used when flammable gases/vapors may be released.

Personal Protective Equipment: Gloves. Protective clothing. Protective goggles. Insufficient ventilation: wear respiratory protection.

Hand Protection: Protective gloves.

Eye Protection: Chemical goggles or safety glasses.

Skin and Body Protection: Wear suitable protective clothing.

Respiratory Protection: If exposure limits are exceeded or irritation is experienced, NIOSH approved respiratory protection should be worn.

Other Information: When using, do not eat, drink, or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State	:	Liquid
Appearance	:	Colorless
Odor	:	Polyether
Odor Threshold	:	Not available
pH	:	9-10
Relative Evaporation Rate (butyl acetate = 1)	:	Not available
Melting Point	:	Not available
Freezing Point	:	Not available
Boiling Point	:	Not available
Flash Point	:	>660°F (>350°C)
Auto-ignition Temperature	:	Not available
Decomposition Temperature	:	Not available
Flammability (solid, gas)	:	Not available
Lower Flammable Limit	:	Not available
Upper Flammable Limit	:	Not available
Vapor Pressure	:	Not available
Relative Vapor Density at 68°F (20°C)	:	> 1 (Air = 1)
Relative Density	:	Not available
Specific Gravity	:	0.98

Solubility	:	Not determined
Partition coefficient: n-octanol/water	:	Not available
Explosion Data – Sensitivity to Mechanical Impact	:	Not available
Explosion Data – Sensitivity to Static Discharge	:	Not available
Volatile Organic Compounds	:	0 g/L
Solids content	:	100%

SECTION 10: STABILITY AND REACTIVITY

Reactivity: Not available.

Chemical Stability: Product is stable.

Possibility of Hazardous Reactions: No dangerous reactions known.

Conditions to Avoid: Exposure to high temperatures.

Incompatible Materials: Reacts with oxidizing agents.

Hazardous Decomposition Products: Carbon monoxide and carbon dioxide. Tin oxide.

SECTION 11: TOXICOLOGICAL INFORMATION

Information On Toxicological Effects - Product

Acute Toxicity: Not classified.

LD50 and LC50 Data: Not available.

Skin Corrosion/Irritation: Skin irritant.

Serious Eye Damage: May irritate the eye.

Respiratory or Skin Sensitization: Sensitization possible through skin contact.

Germ Cell Mutagenicity: Data not available.

Teratogenicity: Not available.

Carcinogenicity: Not available.

Specific Target Organ Toxicity (Repeated Exposure): Not available.

Reproductive Toxicity: Not available.

Aspiration Hazard: May be fatal if swallowed and enters airways.

Specific Target Organ Toxicity (Single Exposure): Not classified

Symptoms/Injuries After Inhalation: Irritation of mucus membranes in the respiratory tract.

Symptoms/Injuries After Skin Contact: Skin irritation, which may lead to the following symptoms: reddening, swelling, rash, scaling, or blistering. Cured product is difficult to remove from skin. Skin absorption is possible, but harmful effects are not expected from this route of exposure under normal conditions of handling and use.

Symptoms/Injuries After Eye Contact: Contact with eye could cause tearing, reddening, and swelling. If left untreated, corneal damage can occur, and injury is slow to heal.

Symptoms/Injuries After Ingestion: Single dose oral toxicity is low. Swallowing small amounts of this product during normal use is not likely to cause any adverse health effects. Ingestion of large amounts may cause serious injury or death.

Chronic Symptoms: Not available.

Information on Toxicological Effects – Ingredient(s)

LD50 and LC50 Data

N-(3-(trimethoxysilyl)propyl)ethylenediamine (1760-24-3)	
LD50 Oral Rat	7,699 mg/kg

Carcinogenicity Data:

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed carcinogen by IARC, ACGIH, NTO, or OSHA.

SECTION 12: ECOLOGICAL INFORMATION

Toxicity – Ingredients

No information available.

Persistence and Degradability

No further relevant information available.

Biodegradation Tests:

Bioaccumulative Potential – Product

No further relevant information available.

Bioaccumulative Potential – Ingredients

Bioaccumulation: No further relevant information available.

Mobility in Soil

No further relevant information available.

Other Adverse Effects

Other Information: Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Recommendations: Dispose of waste material in accordance with all local, regional, national, and international regulations.

Additional Information: Prevent runoff from entering drains, sewers, or waterways.

SECTION 14: TRANSPORT INFORMATION

In Accordance with DOT

Proper Shipping Name : Non-Regulated Material

In Accordance with IMDG

Proper Shipping Name : Not Regulated
Hazard Class :
Identification Number :
Packing Group :
Marine Pollutant :

In Accordance with IATA

Proper Shipping Name : Not Regulated
Hazard Class :
Identification Number :
Packing Group :
Marine Pollutant :

In Accordance with TDG

Proper Shipping Name : Not Regulated
Hazard Class :
Identification Number :
Packing Group :
Marine Pollutant :

SECTION 15: REGULATORY INFORMATION

US Federal Regulations

N-(3-(trimethoxysilyl)propyl)ethylenediamine (1760-24-3)
Listed on the United States TSCA (Toxic Substances Control Act) Inventory

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Revision date : 01/19/2015

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

H315	Causes Skin Irritation
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation

Party Responsible for the Preparation of This Document

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